Remarks

Claims 1-16 remain pending after the amendment. No new matter is added.

Rejections Under 35 USC 112

The examiner stated that the meaning of the following phrase in Claim 1 is unclear: "the subset with the fewest number of light emitters." What this phrase means in the context of Claim 1 is that, out of the "at least three subsets of light emitters" in the set, the subset with the least number of light emitters is being identified. It is respectfully submitted that it is inherent in the contest of Claim 1 that the "fewest number of light emitters" is relative to the number of light emitters in each of the remaining subsets in the set. Applicants' amendment expressly states this inherent property that the fewest number of light emitters is relative to the number of light emitters in each of the remaining subsets in the set, so no new issues are being raised by the amendments.

The examiner stated that the limitation "fewest number of light emitters" is "broad, since 'a few' indicates a quantity more than one (from two to infinitude)." However, the subject claim language is simply identifying the subset with the least number of light emitters, rather than an exact number. The subset with the least (fewest) number of light emitters is very definite. This "fewest number" may be 3 (specified in the claim as the minimum) or any number greater than 3; however, the term is still definite since it clearly identifies one of the subsets. Accordingly, it is respectfully submitted that the examiner's rejection under 35 USC 112 was unwarranted, but Applicants have amended the claims nevertheless.

Claims 10 and 12 have been similarly amended.

Rejections Under 35 USC 102

The examiner rejected all independent Claims 1, 10, and 12 as either being anticipated by or made obvious by Hoelen (US 2002/0167016). The examiner relies on Hoelen's Fig. 4D, which shows the repeating light emitter pattern BBRBB.

The examiner repeated his previous rejection verbatim but stated on page 6, "In response to Applicant's amendment, new rejection of the amended claims is given." However, no new rejection is given, and the examiner has not addressed any of the arguments

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put for by Applicants in the previous response. Applicants had put forth a number of examples for why the independent claims are distinguished from Hoelen. These distinguishing features included the following:

1) The Hoelen pattern BBRBB of Fig. 4D is a symmetric pattern, while Applicants' independent claims recite "the arrangement of colors along the line not being formed of symmetrical patterns."

2) Applicant's independent claims require that there be at least three different color light emitters (e.g., LEDs) in each set with at least three light emitters of the same color within each subset of light emitters. Hoelen's pattern in Fig. 4D is not particularly relevant since there are only two colors in the pattern.

3) Applicants' claimed layout of the different color light emitters is necessarily an iterative process, while Hoelen's layout of a repeating pattern of BBRBB in Fig. 4D is inherently predetermined.

The examiner has ignored the major aspects of Applicants' independent claims, which are unrelated to the Hoelen patterns and process, and repeated his rejection of the claims.

Applicants respectfully submit that the examiner has not met his burden of proof for the rejection of the independent claims. In order to properly respond to a rejection, Applicants require that the examiner explain why Hoelen still anticipates the independent claims in light of Applicants' previous amendments and arguments.

A brief explanation of Applicants' claimed innovation is presented below.

A description of one embodiment of the claimed structure and method is provided in paragraphs 0018-0020 of the specification. Fig. 2 also illustrates the invention, where the set of light emitters (e.g., LEDs) is the highlighted 17 emitters, not being formed of symmetric patterns. The subsets are red (3 reds), blue (5 blues), and green (9 greens). The relative numbers of light emitters are selected based on the desired overall color point (e.g., color temperature) of the illuminator. For a display backlight, the color point will typically be a white point.

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Since there are only three red emitters, those three red emitters are first positioned at substantially equal distances. In Fig. 2, the red emitters are separated by five positions.

The next fewest number of emitters is blue, with five emitters. The blue emitters are positioned at substantially equal distances in the unoccupied positions. In Fig. 2, the blue emitters are separated by two or three positions.

The next fewest number of emitters is green, with nine emitters. The green emitters then fill the unoccupied positions, which is as equidistant as possible given the available positions.

The resulting arrangement is formed without symmetric patterns of colors so that the resulting white point (or other combined color) can be achieved without the restriction of forming symmetric patterns, and the combined color is uniform color across the illuminator.

Claims 1, 10, and 12 apply to three or more subsets (colors).

Hoelen's pattern of Fig. 4D is a symmetric pattern. Disadvantages of symmetrical positioning of the colors is described in Applicant's specification in paragraphs 0003 and 0004. The disadvantages include poor color uniformity. Further, symmetric patterns force the designer to use only the relative number of color emitters that fit into the symmetric pattern even if a more optimal relative number is desired. For example, if the symmetric pattern is BBRBB and the entire line of emitters is 20, Hoelen could not add any number of red, blue, or green LEDs to achieve the desired color point; Hoelen is limited to only adding the number of red, blue, or green LEDs that can create a symmetric pattern. Thus, the resulting color point will not be precise.

Applicant's Claim 1 is very different from the teachings of Hoelen.

Firstly, Applicant's Claim 1 requires that "the arrangement of colors along the line not being formed of symmetric patterns." All of Hoelen's arrangements exceeding two emitters are symmetric patterns of colors. In order to create a precise overall white point for a backlight, the various numbers of red, green, and blue LEDs may be such that the colors cannot be arranged in symmetric patterns. Since Hoelen has no means of forming arrangements of colors other than in symmetric patterns, Hoelen cannot optimize the relative

numbers of red, green, and blue LEDs. Hoelen's symmetric pattern technique restricts the achievement of a desired white point (or color point).

Secondly, Applicant's Claim 1 requires that there be at least three different color light emitters in each set with at least three light emitters of the same color within each subset of light emitters. Thus, Hoelen's pattern in Fig. 4D is not particularly relevant since there are only two colors in the pattern.

Thirdly, the iterative aspect of Applicants' light emitter layout provides the best color uniformity while achieving the desired white point.

In Hoelen's Fig. 4D, the pattern BBRBB repeats. Since Hoelen is simply providing symmetrical patterns, Hoelen's color arrangement along a line is predetermined and not an iterative process, in contrast to Applicants' independent claims. If, in order to create a certain backlight color point, two more blues had to be added to a line of 20 light emitters, Hoelen would be unable to do it since Hoelen requires symmetrical patterns of light emitters. This same rationale applies to all of Hoelen's patterns. In contrast, in Applicants' independent claims, the two blue emitters would be accommodated without loss of color uniformity.

Accordingly, Applicants' inventions of Claims 1, 10, and 12 are distinguished from Hoelen's teachings for a number of important reasons. The differences allow Applicants' illuminator or backlight to better match a desired white point since the colors in the line need not form symmetric patterns, and there is improved color uniformity in the combined light output.

The examiner is invited to call Applicant's attorney at 408-382-0480 x202 for further discussion.

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